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# ABSTRACTS
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(Pages refer to the Japanese originals of this volume unless otherwise noticed)

On the Ascorbic Acid Formation from Mannose in Plants and in Animal Bodies.

(pp. 1075~1079)

By Tetutaro TADOKORO and Keizō ITŌ.
(Hokkaido Imperial University, Received June 29, 1938.)

Euler, Gartz and Malmberg mentioned the ascorbic acid formation from mannose in vitro, after the incubation at 37°C with animal tissues. The author intended to determine this power of the liver of the rat which was fed under different conditions. In the avitaminosis B_2 of the young rats, when their growth stopped, this power of liver became very weak while in that of the rats, injected with lactoflavin solution, this power of liver was increased enormously. In the alcoholism of young rats, when their growth stopped, this power of liver was not present, while in the liver of the rat, cured of alcoholism by the injection of lactoflavin, this power was recoverd.

Utilization of Irradiated Rice-bran-cake-kōji for Poultry Feeding

(pp. 1080~1084)

By Kisaburo YOKOYAMA and Ryōhei TAKATA.
(Laboratory for Food Industry, Osaka Imperial University, Received July 18, 1938.)

On the Alcohol-Manufacture from Jerusalem Artichoke (Part V~VII)

(pp. 1085~1093)

By Toshinobu ASAI and Tetsuo YUKINOURA.
(Agricultural Chemical Laboratory, Morioka Agricultural College, Japan, Received June 20, 1938.)

Chemical constituents of Jerusalem artichoke were investigated and the optimum conditions on direct alcoholic fermentation of the fresh tuber were also studied, i. e., the selection of yeasts and the treatments of the material, etc.

The fermentation ratio attained to ca. 95% of the total sugar contained in the mash.

On the Varieties of Aspergillus Oryzae employed in Shōyu-Manufacture. Part II.

Influences of Temperature and pH upon Growth, etc.

(pp. 1094~1102)

By Masajiro Kibi.
(Microbiological Laboratory of Yamasa Shōyu Co. Ltd., Chōshi,
Chiba-ken ; Received June 30, 1938.)

The present writer has investigated the following characters of the varieties which were studied morphologically in the previous work.

(1) Influence of temperature upon growth. Cultures on Czapek's solution agar were incubated at 20°, 25°, 30°, 33°, 35°, 37° and 40°C. Observations on myceríal growth and conidial development showed that each variety grew fastest between 33° and 37°C, and there was no noticeable difference between the varieties.

(2) Influence of pH upon growth. A large amount of Czapek's solution agar was made up and adjusted to different pH by the addition of lactic acid or sodium hydroxide. Growth of the fungi at various pH at 25°C were observed every day during a week. The critical pH range was found to be between 2.5 and 9.5 generally, but variety No. 6 was tolerant to acidity so high as below pH 2.

(3) Comparison of the utilization of various carbohydrates as sources of carbon.

(4) Comparison of the utilization of various nitrogen compounds.

Studies on the Manuring of *Juncus effusus* L. var. *decipiens* Buch. Report I.

On the Manurial Value of Different Kinds of Nitrogen Compounds.

(pp. 1103~1112)

By H. Sutoh.
(The Prefectural School of Agriculture and Forestry,
Masuda, Simane, Japan, Received June 4, 1938.)

The rush, *Juncus effusus* L. var. *decipiens* Buch, is cultivated in paddy-fields from late Autumn (or early Spring) to early July (or early August). This crop develops very vigorously under suitable conditions. Since the part we utilise is its stem, the problem of the manure or of fertilizer for this rush is a very important one. And so the manure for this purpose is applied in quantity ranging from 3 to 4 times the quantity applied to the rice plant.

The author is at present investigating the value of manure on this plant from cultural and also biochemical viewpoints, but in this paper, only the results obtained as regards the manurial value of different kinds of nitrogen compounds will be reported.

Ammonium sulphate, sodium nitrate, cyanide (lime nitrogen), ammonium nitrate, urea, uric acid, hippuric acid and fish meal were used in this experiment as nitrogen sources, and the manurial value of each was compared with those obtained with other chemicals used in sand cultures. The conditions of growth, yield, and also the quality of the rush were investigated.

The following are some of the results obtained:

(1) The rush makes use of nitrogen of ammonium salt more than the nitrates. This crop may therefore be regarded as an ammonium-plant.

(2) Ammonium sulphate is much more effective in increasing the length and yield of the rush than other nitrogen compounds.

(3) Fish meal is found more effective than the others in producing superior rush.

(4) Urea is more effective than sodium nitrate.

(5) Lime nitrogen, is harmful even for such a hardy crop as the rush, unless it is very carefully treated.

(6) Hippuric acid seems to be harmful even for the vital function of the rush.

(7) Uric acid seems to have no injurious effect on the physiological process of the rush, its manurial value being less than that of sodium nitrate.

(8) The manurial values of the standard (100) of ammonium nitrogen were: sodium nitrate 58.8; ammonium nitrate 85.4; urea 63.4; uric acid 54.0, and fish meal 62.3.

Studies on the High Pressure Hydrogenation of Soya Bean Oil. VI.

On the Formation of Unsaturated Higher Fatty Alcohol.

(pp. 1113~1116)

By Y. Shinozaki and S. Sumi.

(Central Laboratory, South Manchuria Railway Co., Dairen. Received June 4, 1938.)

Studies on the High Pressure Hydrogenation of Soya Bean Oil. VII.

On the Mechanism of the Formation of Higher Fatty Alcohol.

(pp. 1117～1122)

By Y. Shinozaki and S. Sumi.

(Central Laboratory, South Manchuria Railway Co., Dairen. Received June 4, 1938.)

Studies on the High Pressure Hydrogenation of Soya Bean Oil. VIII.

On the Influence of the Conditions applied upon the Formation of Unsaturated Higher Fatty Alcohol.

(pp. 1123～1128)

By Y. Shinozaki and S. Adachi.

(Central Laboratory, South Manchuria Railway Co., Dairen. Received June 4, 1938.)

Studies on the High Pressure Hydrogenation of Soya Bean Oil. IX.

On the Influence of the Preparation of Zn-Cr Catalyst upon the Formation of Unsaturated Higher Fatty Alcohol.

(pp. 1129～1134)

By Y. Shinozaki and S. Sumi.

(Central Laboratory, South Manchuria Railway Co., Dairen. Received June 4. 1938.)

Studies on the Synthetic Wax-Esters.

(1) The Influence of the Mixed Catalysts upon the Wax-Ester Formation in High Pressure Hydrogenation.

(2) The Solubilities of the Synthetic Wax-Esters in Organic Solvents.

(pp. 1135～1143)

By Y. Shinozaki and S. Adachi.

(Central Laboratory, South Manchuria Railway Co., Dairen. Received June 4, 1938.)

On the Nutritive Value of Proline and Oxy-Proline.

Feeding Experiments with Amino Acid Mixture. (III)

(pp. 1144~1146)

By S. MAEDA, T. AIGASI and H. MATSUOKA.

(The Institute of Physical and Chemical Reserch, Received June 5, 1938.)

Alcohol Manufacture from Potato. (Part XI.)

On the Manufacture of Absolute-Alcohol on
Semi-Industrial Scale. (I)

(pp. 1147~1163)

By H. OKADA.

(The Hokkaido Industrial Experiment Station, Received July 13, 1938.)

The acid-saccharification and fermentation experiments were carried out on a semi-industrial scale using fresh potato and dried potato, the latter being made by using a rotatory kiln-dryer, as the raw material. 2,000~3,000 kg of the fresh potato and 500 kg of the dried potato were used, respectively, to prepare 3,600 L of the mash at a time. Using 20~23 kg of H_2SO_4 (Bé 65°) on the raw material, above described, the saccharifications at 3.5 atm. pressure for 45~100 minutes gave the best results. By this process 95.5% of the starch in the raw materials was converted into reducting-sugars. 10,800 L of the mash was fermented at a time. The acclimatized Sacch. thermantitonum was employed in these experiments. Inoculating 9% seed-culture to the mash, the best yield was obtained, and the fermentation was completed after 65 hours. 87% of the reducing sugar in the mash could be fermented and the yield of alcohol amounted to 58.4 L % of the starch. Absolute alcohol (99.8%) was distilled by the continuously working rectifying-apparatus using trichlor-ethylene.

On the Content of 0.2 *N* HCl Soluble Potash in Tyosen Soils. (IV)

(pp. 1164~1174)

By Dr. MISU-Hideo.

(Agricultural Experiment Station, Government General of Tyosen, Received Apr. 21, 1938.)

Studies on the Yeasts found in "Miso".

(pp. 1174~1206)

By Masatoshi Mogi.
(The Brewing Laboratory of Noda Shôyû Co., Ltd., Noda-Machi, Chiba-Ken, Japan. Received Apr. 27, 1938.)